INFORMATION SCIENCE PUBLISHING
701 E. Chocolate Avenue, Hershey PA 17033, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com
ITB9037

Chapter VI

Preproduction Stages in Multimedia Development: Conceptualization and Scriptwriting

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ABSTRACT

In this chapter, the focus is on the design of autonomous language learning courseware based on the Constructivist view, where learners only learn how to learn when they are actively involved in the learning process. This calls for programs that are designed to be interactive, encouraging students to select the type and pace of work, and providing feedback for decisions made. The author draws on the experience of producing an interactive multimedia package, Virtual Language University, for English-language learning. The focus is on the decision-making process in front-end design work. The conceptualization stage addresses: (a) specification decisions related to educational needs; (b) interface design with emphasis on metaphor, menu selection, diagnostic testing, and screen design; and (c) navigation. Decisions related to scripting include the general format, coding, and creation of templates, graphics and animation, video specifications, and task interaction. Each phase has examples taken from the Virtual Language University, a CD-ROM package.

INTRODUCTION

The use of technology has been introduced to most areas of teaching for several decades now. In the earliest stages of this transition, researchers considered the prospect of whether the teacher could be replaced altogether. Technology played the teacher's role, and students became accustomed to learning *from* technology (Jonassen et al., 1999). Just

as students had learned from teachers before, they now learned from videos, television, computer-assisted instruction frames, or any technology designed to transmit information to the student. Yet, as Jonassen et al. pointed out, understanding cannot be conveyed or transmitted. Understanding takes place only when meaning is constructed by students thinking by themselves. According to this Constructivist approach, learning takes place when students are: "…thinking about what they are doing or what they did, thinking about what they believe, thinking about what others have done and believe, thinking about the thinking processes they use—just thinking. Thinking mediates learning. This requires a shift from traditional "technology-as-teacher" to "technology-as-partner" (Jonassen et al., 1999). Within this learning paradigm, the students are learning *with* the computer, not *from* it. Other researchers confirm that such interactivity is a necessary component for learning to take place (Laurel, 1990). Learners only learn how to learn when they are actively and continually involved in the learning process.

This calls for programs that are designed to be interactive, encouraging students to select the type and pace of work, and providing feedback for decisions made. Interactive Multimedia is a technology that appeals to the sense of sight, sound, and touch by integrating video, audio, graphics, animation, and text applications. Student-centered learning places emphasis on interaction for the learner. Interaction can be between the learner and a tutor (as in a host or animated character), or it can be between the learner and the computer (as in feedback provided in bubbles, online help, etc., based on performance) (Klassen et al., 1999). As this new mode of learning evolves, courseware designers are challenged to produce materials that deepen understanding, promote interactivity, and encourage self-direction (Gatlin-Watts et al., 1999; Hanson-Smith, 1996–1997).

A university professor's task today in preparing for classes is drastically changing. There are, of course, a multitude of stages of using technology in teaching, ranging from replacement of the face-to-face professor to use of technology as an adjunct to teaching. The design and development work involved goes well beyond normal preparation time and certainly beyond the expertise of most academic staff, especially if materials have been produced with tools such as Authorware, Director, Flash, or Dreamweaver. Delivering a script so that a development team can produce an interactive package without constant supervision takes an enormous amount of planning and detailed explanations and instructions.

The author at City University of Hong Kong produced an interactive courseware package *Virtual Language University* (VLU), an interactive multimedia package for language learning that has over 1800 interactive tasks. In the planning stage, it became apparent that there was limited literature available on the front-end decisions to be made before a script can be delivered to a development team, a script that programmers and graphic designers can follow without constant supervision. In this chapter, the author draws on the experience of producing VLU, describes the decisions to be made during the conceptualization stage, and illustrates the method of scriptwriting that was developed.

CONCEPTUALIZATION STAGE

Educational Needs

Educational needs relate to the teaching objectives and to the needs of the learners. There is a dearth of high-quality language learning packages that actually involve students. High quality assumes superior design work with three-dimensional animation, professionally